CLAIMS

1. A method of generating a synthetic waveform output corresponding to a sequence of substantially similar cycles, comprising the steps of

(a) generating a synthetic waveform sample;

(b) generating a successive waveform sample from said synthetic waveform sample and data defining the transformation followed by said cycles in the temporal vicinity of said synthetic waveform sample;

(c) designating said successive waveform sample as a synthetic waveform sample and repeating step (b);

(d) repeating step (c) a plurality of times to generate a sequence of said successive waveform samples corresponding to a plurality of said cycles; and

(e) outputting the samples of said sequence to generate a waveform.

2. A method according to claim 1, in which said waveform comprises voiced speech.

3. A method according to claim 1 ~~or claim 2,~~ in which said data defining said transformation does so by reference to a predetermined reference waveform sequence.

4. A method according to claim 3, in which said reference waveform sequence comprises a stored speech waveform.

5. A method according to claim 1 ~~any preceding claim~~, in which said steps (a) and (b) comprise generating a plurality of values representing said waveform sample values as a point in a multidimensional space in which corresponding portions of successive said cycles are substantially superposed.

6. A method according to claim 5 when appended to claim 3 or claim 4, in which the transformation approximates that which would transform a first displacement vector, extending from a first time point on said reference waveform

sequence to a corresponding time point on the waveform to be synthesised, to a second displacement vector extending from a second point, successive to the first, on said reference waveform sequence to a corresponding second point on the waveform to be synthesised.

7. A method according to claim 3 ~~any of claims 3 to 6~~, in which a given successive waveform sample is derived in accordance with data from a point on said reference waveform sequence at a position within a said cycle which corresponds to that of said given successive waveform sample, and at least one other point on said reference waveform sequence offset in time therefrom.

8. A method according to claim 1 ~~any preceding claim~~, in which said step (b) comprises calculating said transformation from a set of stored waveform values.

~~9.~~ A method according to claim 1 ~~any preceding claim~~ in which the initial performance of said step (a) to initial synthesis of said waveform comprises a step of selection of an initial value which differs from a previous initial value selected on a previous synthesis of said waveform.

10. A method according to claim 9 in which said selection step comprises applying a pseudo random number generation algorithm to select said value.

11. A method according to claim 9 ~~or claim 10~~ in which said step of selection comprises referring to a stored waveform sample value and calculating a synthesised initial waveform value similar but different to said stored waveform value.

~~12.~~ A method of synthesis of a voiced speech sound comprising calculating each new output value from the previous output value using data modelling the evolution, over a short time interval, of the voiced speech sound to be synthesised.

13. A method of concatenating two cyclical sounds, comprising progressively interpolating between pairs of values of said sounds at corresponding points within the cycle of each of said sounds.

14. A method of synthesising a cyclical sound intermediate between two other cyclical sounds, for each of which a succession of sample values corresponding to a plurality of cycles are stored, comprising the steps of generating interpolated waveform samples consisting of a succession of values each of which is interpolated from a pair of points, one each respectively from corresponding portions from a cycle of each of the stored waveforms; generating a model of the evolution, over a short time interval, of the interpolated waveform; and calculating each successive output value from an immediately preceding ~~a previous output~~ value using said evolution model.

15. Synthesis apparatus arranged to perform the method of claim ~~any preceding claim~~.